

WHAT IS CLAIMED IS:

1. A diffraction type optical pickup lens comprising a convergent lens having at least one surface formed with such an aspheric surface that a luminous flux having a wavelength  $\lambda_1$  is converged at a first predetermined position;

wherein at least one surface of said convergent lens is formed with a zone plate having such a wavelength selectivity that a luminous flux having a wavelength  $\lambda_2$  is converged at a second predetermined position whereas said luminous flux having said wavelength  $\lambda_1$  is transmitted therethrough as it is; and

wherein said convergent lens is transparent to said luminous fluxes having said wavelengths  $\lambda_1$  and  $\lambda_2$ .

2. A diffraction type optical pickup lens according to claim 1, wherein said zone plate is constituted by a concentric grating having a stepped cross section.

3. A diffraction type optical pickup lens according to claim 2, wherein the number of steps in said stepped concentric grating is 3.

4. A diffraction type optical pickup lens according to claim 1, wherein each of both surfaces of said convergent lens is formed with such a zone plate that said luminous flux having said wavelength  $\lambda_2$  is converged at said second predetermined position.

5. A diffraction type optical pickup lens according to claim 1, wherein each of both surfaces of said convergent lens is formed with such an aspheric surface that said luminous flux having said wavelength  $\lambda_1$  is converged at said first predetermined position.

6. A diffraction type optical pickup lens according to claim 1, wherein said zone plate is formed by depositing titanium dioxide into a predetermined form on a lens substrate.

7. An optical pickup apparatus comprising the diffraction type optical pickup lens according to claim 1, said apparatus being adapted to record or reproduce two kinds of optical recording media having respective thicknesses different from each other;

wherein one of said optical recording media is recorded or reproduced by said luminous flux having said wavelength  $\lambda_2$ , whereas the other is recorded or reproduced by said luminous flux having said wavelength  $\lambda_1$ .

8. An optical pickup apparatus according to claim 7, wherein a luminous flux incident on said diffraction type optical pickup lens is a substantially parallel luminous flux.

9. An optical pickup apparatus according to claim 7, wherein NA with respect to said luminous flux for said one optical recording medium is set smaller than that with respect to said luminous flux for the other recording medium; and wherein said zone plate is formed on the surface of said convergent lens on a light source side.

10. An optical pickup apparatus according to claim 9, wherein said one optical recording medium is CD-R, whereas the other optical recording medium is DVD.